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THE PRINCIPLES OF ECONOMIC GEOGRAPHY.

IN a previous article¹ I endeavored to connect economics and geography in a consistent system and so to establish the study of economic geography. It is the purpose of the present paper to formulate the fundamental principles of the subject.

According to the geographic scheme set forth before, the descriptive study of the earth is composed of four divisions: Mathematical Geography, which deals with the earth as a whole, exhibits its nature and determines its relation to the other members of the solar system; Physical Geography, which describes the superficial properties of the globe, its rigid lithosphere, its mobile hydrosphere and its circumambient atmosphere; Biogeography, which recognizes a vital purpose in nature and regards the earth as adapted to the support of life; and Economic Geography, which recognizes a utilitarian purpose in nature and considers the world as fitted for the ascendancy of civilization. Each of these descriptive studies is guided in its course by an antecedent science and describes a separate series of phenomena. Mathematical geography starts from astronomy and describes universal phenomena; physical geography starts from geology and describes inorganic phenomena; biogeography starts from biology and describes organic phenomena; and economic geography starts from economics and describes super-organic phenomena.

The points of departure from which the several descriptive studies proceed are perfectly distinct. They all deal with the same general subject-matter, however; and, as the last section of each division overlaps the first section of the next succeeding division, the various lines of geographic investigation are apt to become confused. Where the junctions are effected between the divisions of geography, care must, therefore, be taken to discriminate between the several descriptive studies.

¹ POLITICAL SCIENCE QUARTERLY for March, 1901, p. 79.

Thus, where the descriptive study of universal phenomena is succeeded by the descriptive study of inorganic phenomena, it is necessary to note that the point of view changes from astronomy to geology and the mathematical principle is supplemented by the physico-chemical principle. So, in the same way, where the descriptive study of inorganic phenomena is succeeded by the descriptive study of organic phenomena, the point of view changes again from geology to biology and the physico-chemical principle is supplemented by the physiological principle.

These earlier distinctions have long since been definitely established, so there is no difficulty in following the line of geographic investigation to this point. But where biogeography, the descriptive study of organic phenomena, overlaps economic geography, the descriptive study of superorganic phenomena, confusion still prevails. The transition from biology to economics has not been carefully enough determined; hence, in passing over from the physiological to the psychic principle the continuity appears to be broken. From the lack of requisite discrimination, confusion has accumulated at this point. Facts which should be explained by economics are constantly being referred to biology, and *vice versa*. To cite a single instance: racial variations, which are the result of the biological process, are every day identified with culture distinctions, which are due to the operation of economic agencies. Paleontologists, for example, take round-headed people and polished stone implements as natural concomitants of each other, apparently without realizing that there is no necessary connection between the two, as one is an organic, the other a superorganic phenomenon. For the same reason the much-mooted Aryan question remains hopelessly involved. In common parlance, likewise, we speak of the inferiority of the Negro race and the superiority of the Teutons, Celts, Slavs or Anglo-Saxons (depending usually upon the nationality of the speaker), as if each ethnic stock were endowed with a genius of its own. Since such confusion exists, careful discrimination is required. In formulating the fundamental principles of

economic geography, I shall, therefore, consider the study in connection with biogeography and endeavor to disentangle the two lines of investigation.

Biogeography, the descriptive study of organic phenomena, derives its point of departure and dynamic principle from the science of biology ; economic geography, the descriptive study of superorganic phenomena, derives its point of departure and dynamic principle from the science of economics. To discriminate between the descriptive studies, it will accordingly be necessary to distinguish between the antecedent sciences.

Variability is the point of departure for the explanation of organic evolution. By variability biologists mean the susceptibility to modification inherent in organic life, "that plasticity or modifiability of any organism, in virtue of which an animal or a plant may change in form, structure, function, size, color or other character, lose some character or acquire another, and thus deviate from its parent form." This tendency of organisms to become unlike their parents is in the first instance an intrinsic quality and, like other natural attributes, transmissible from generation to generation. But, though originally intrinsic, variability is called into play only by extrinsic conditions. In this sense, therefore, variability, or the tendency to vary under environmental conditions, may be regarded as the counter-active of heredity, or the tendency to breed true. The former is the innovative, the latter the conservative, factor of organic evolution.

Looking over the whole range of organic evolution, among the countless cases of variation that have resulted from the interaction of variability and environment, the general tendency appears to be toward the preservation of the more useful and the extinction of the less useful or useless characters. This is due to the fact that selection has been operative all along the line, eliminating the unfit or ill-adapted from the struggle for existence and allowing only the fittest or best adapted to survive. The more plastic the organism, the greater the possibility of variation ; the more favorable the environment, the higher the type of plant or animal evolved. Organic evolution,

or the survival of the fittest forms of life, may, therefore, be regarded as the result of the selection of such variations as adapt the successful organisms to their environments. Through selection, accordingly, the course of organic evolution is characterized by improvement.

Utility is the point of departure for the study of super-organic development. By utility, economists understand "the quality of satisfying human wants—the power to change a man's subjective condition from a lower to a higher degree of happiness." Now, utility is neither an attribute of human nature nor a property of outer nature, but an intermediate quality or, as a recent writer has aptly expressed it, "the qualitative weal relation of nature to man." The concept should accordingly be approached from two sides—from the point of view of demand, which emanates from human nature, and from the standpoint of supply, which proceeds from outer nature.

Demand arises from the fact that human beings are impelled to action by a desire to obtain pleasure, and pleasure in the economic sense is synonymous with the satisfaction of wants. So demand, emanating from human nature, may be said to tend directly toward utility. Supply, on the other hand, arises from the fact that the earth provides pleasure-giving products, which, because they satisfy men's wants, are in economic terminology called goods. Supply, proceeding from outer nature, cannot, however, on this account be said to tend directly toward utility, since in the large majority of cases the intervention of man is necessary to fashion natural resources into goods. The economic sequence runs, accordingly, as follows: demand tends toward utility, utility leads to utilization, and utilization results in supply.

Looking over the whole range of superorganic development, the general tendency appears to be toward the augmentation of utility. During the course of man's ascent from savagery to civilization, the quality of satisfying human wants has increased enormously, with the result that the subjective condition of civilized man has been raised to a far higher degree of happiness than that of the savage. The meliorative motive

emanates in this instance from within, the initiative toward superorganic development being derived from man's desire to satisfy his wants. To determine the dynamics of civilization it is, consequently, necessary to start once more from the subjective side and proceed from demand toward utility.

Analysis shows that human wants are in one sense satiable and in another sense insatiable. Quantitatively considered, human wants are satiable. That is to say, if consumption be restricted to the same sort of goods, demand falls off with successive increments of supply, satisfaction diminishes and utility describes a declining curve. Qualitatively regarded, however, human wants are insatiable. That is to say, if the supply be judiciously varied, if instead of goods of the same sort a variety of goods be offered, there is no such falling off in demand; for the consumption of complementary goods affords continued satisfaction, and the declining scale of utility may be maintained in this way almost indefinitely above the point of satiety. Since human nature is so constituted, the pursuit of pleasure means more to man than the gratification of a recurring set of desires; it involves the satisfaction of an expanding series of wants. Thus, in tending toward utility, demand makes for variety; in seeking to satisfy their qualitative wants, men strive to extend the scope of their consumption.

On passing over from the subjective to the objective side, it becomes at once apparent that man's desire to extend the scope of his consumption is met by obstacles arising from the character of the environment, which can be overcome only by the exertion of energy and the exercise of ingenuity on his part. Outer nature, it is true, affords a few free goods, but by no means enough to satisfy men's qualitative wants. For the rest, raw materials must be transformed into pleasure-giving products by artificial processes. To this end implements and organization are necessary. In order to extend the scope of his consumption, man is, consequently, compelled to improve his means and methods of production.

In a word, the augmentation of utility involves a corresponding increase of utilization; so that between man's desire to consume

and his capacity to produce there is constant interaction which makes for industrial progress, or the gradual ascendancy of civilization over savagery. Superorganic development may consequently be regarded as the outcome of the economic sequence dynamically applied: expanding demand tends toward the augmentation of utility, the augmentation of utility necessitates increasing utilization and increasing utilization results in the differentiation of supply. Through the augmentation of utility and the corresponding increase of utilization, the course of superorganic development is, accordingly, characterized by improvement.

From what has been said it is evident that the principles of organic evolution and those of superorganic development are essentially different. As explained by biology, organic evolution is a passive process, calling for no initiative on the part of the organism beyond the instinctive impulse to the preservation of self and kind; for, though variability is an intrinsic attribute, it operates only from generation to generation and cannot, therefore, be said to exercise any conscious influence upon individual life. As explained by economics, superorganic development is, on the contrary, an active process requiring individual initiative; for the augmentation of utility implies on man's part a conscious desire to extend the scope of his consumption and a recognized ability to improve his means and methods of production. Variability, the point of departure for organic evolution, means, in short, simply susceptibility to modification; whereas utility, the point of departure for superorganic development, implies capability of melioration. Thus, though organic evolution and superorganic development are both characterized by improvement, progress is differently determined along the two lines: in the former case the meliorative motive emanates from without and the dynamic factor is negative in character; in the latter case the meliorative motive emanates from within and the dynamic element is positive in character.

Having distinguished between the antecedent sciences, it is a comparatively simple matter to discriminate between the

corresponding descriptive studies. Biogeography starts from the physiological principle of variability, recognizes a vital purpose in nature and regards the earth as adapted to the support of life. Economic geography proceeds from the psychic principle of utility, recognizes a utilitarian purpose in nature and considers the world as fitted for the ascendancy of civilization. The influence of the environment upon organic evolution constitutes the subject-matter of the former; the effect of the environment upon superorganic development constitutes the subject-matter of the latter.

From the theoretical point of view, therefore, biogeography and economic geography are readily distinguishable, since the two descriptive studies start from distinct points of departure, proceed upon entirely different principles and describe separate series of phenomena. To a certain extent, however, the subject-matter of biogeography is similar to that of economic geography, as both descriptive studies describe the influence of the environment upon man, the former from the organic, the latter from the superorganic, point of view. As a result, confusion is apt to arise along the line of cleavage, where the two descriptive studies overlap. For the sake of clearness, therefore, it will be advisable to trace the course of biogeography through its several sections and separate its subject-matter from that of economic geography.

Assuming variability to be inherent in all organisms and presuming the process of selection to be generally operative, biogeography describes the effects of the environment in establishing the long series of variations that have occurred in the course of organic evolution. To facilitate the detailed study of these variations, biogeography is further subdivided into three sections: botanical geography, which describes the variations of plant life; zoögeography, which describes the variations of animal life; and anthropogeography, which describes the variations of human life. There is no danger of the variations of plant and animal becoming confused (except perhaps by way of analogy) with the distinctions arising among mankind. We may pass over the first two sections of the descriptive study,

therefore, and confine ourselves to a consideration of the third. Anthropogeography describes the effects of the environment in constituting the organic variations that have occurred in the course of human development. It will not be necessary at this juncture to describe these modifications of the human organism in detail. Suffice it to say that the characters thus constituted are the outcome of environmental agencies operating upon the attribute of variability inherent in the anthropoid line. Being organic in character, these modifications are manifested, accordingly, in the morphological type of man, in functional and structural differences, such as the shape of the skull, the pigment of the skin, the texture of the hair, the color of the eyes, stature, physique and the like.

While the environment was acting in this way upon man, constituting organic characters, man was at the same time reacting upon the environment, establishing superorganic standards. As human beings became passively adapted to their surroundings, they also actively endeavored to adapt their surroundings to themselves. Their object was to satisfy as many of their wants as possible and so to make the most of their situation on earth. The extent of such satisfaction depended in the last instance upon the nature of the environment or, more particularly, upon the character of the goods supply. Outer nature is not uniform in this respect, the natural resources of no two regions being exactly the same. As a result, the various environments occupied by man offered different series of potential utilities and required different processes of utilization. The inhabitants of diverse regions of the earth, seeking to satisfy their qualitative wants, came, consequently, in the course of time, to differ from each other in the scope of their consumption and in their means and methods of production. In this way superorganic distinctions were established. It is not necessary at this juncture to describe these differences in detail. Suffice it to say that the distinctions in question are the outcome of environmental agencies operating upon the quality of utility cognizable by mankind. Being superorganic in character, these distinctions are, accordingly, manifested in

men's manner of life, in differences of customs, standards of culture, degrees of civilization and the like.

Human progress is, consequently, characterized by two sets of distinctions, one arising from the action of the environment upon the attribute of variability inherent in the anthropoid line, the other derived from the influence of the environment upon the quality of utility cognizable by mankind. The former, as has been said, constitute the subject-matter of anthropogeography; the latter should be set apart as the subject-matter of economic geography. Thus, though anthropogeography and economic geography both deal with the effects of the environment upon man, the two descriptive studies still describe distinct series of phenomena. Their subject-matter seems similar, because organic variations and superorganic distinctions coincide along the course of human development. The coincidence is entirely superficial, however, so that by careful discrimination confusion can easily be avoided.

The particular instances of differentiation are so manifold that little more can be said from the theoretical side. To determine the actual course of human progress, the effects of the environment in differentiating the several races of man, and in constituting the various schemes of civilization, should be considered historically. As an aid to subsequent investigation along these lines, it may be advisable, however, before closing, even at the risk of repetition, to contrast the principles of organic and superorganic differentiation in a series of antitheses.

Organic variations are due to such general geographic differences as affect the physical structure and so modify the morphological type of man; superorganic distinctions are due to such particular geographic differences as diversify the goods supply and make men modify their manners of life accordingly. The former arise from the direct influence of the environment upon the anatomy of man; the latter arise from the indirect influence of the environment upon the activities of man. In constituting organic variations, the environment

acts unconsciously upon human beings; in establishing superorganic distinctions, human beings react consciously upon the environment. The organic variations occurring in the course of human development may, consequently, be regarded as the accomplishment of that which variability permits, environment requires and selection directs; whereas the superorganic distinctions arising in the course of human development should be considered as the outcome of that which utility suggests, environment allows and utilization determines.

Taking these antitheses as guides, the two descriptive studies of human development may be discriminated, in conclusion, as follows: Assuming variability to be inherent in the anthropoid line, and presuming the process of selection to be operative, anthropogeography describes the effects of the environment in establishing the organic variations that have occurred in the course of human development. Taking utility to be the determinant of the economic activities of man, and supposing individuals to be impelled by the pressure of their expanding wants to utilize natural resources, economic geography describes the effects of the environment in constituting the superorganic distinctions characteristic of human development.

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